

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 6, 7, 13, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wollaber et al. (Wollaber, US 5,335,721) in view of Laing (US 3,366,169) and Bolton et al. (Bolton, US 5,467,610).

Regarding claim 1, Wollaber teaches a window type air conditioner (see figures 1-3), comprising: a case (8), one side of which is positioned on an indoor side and another side of which is positioned on an outdoor side (illustrated in figure 1); at least one indoor heat exchanger (36) mounted inside the case (illustrated in figure 3) positioned on the indoor side (illustrated in figure 3) to heat exchange with indoor air (heat exchanger 36 is capable of performing this intended use function); an indoor cross flow fan (38) that generates a blowing force (illustrated

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in figure 3) so that the indoor air passes through the at least one indoor heat exchanger and that sucks and discharges the indoor air in a circumferential direction thereof (illustrated in figure 3); at least one outdoor heat exchanger (50) mounted inside the case positioned on the outdoor side (illustrated in figure 3) to heat exchange with outdoor air (heat exchanger 50 is capable of performing this intended use function); an outdoor cross flow fan (52) that generates a blowing force (illustrated in figure 3) so that the outdoor air passes through the first and second outdoor heat exchangers and that sucks and discharges the outdoor air in a circumferential direction thereof (illustrated in figure 3); an indoor air suction port (116) that sucks the indoor air into the air conditioner formed in a front surface of the case positioned on the indoor side (illustrated in figure 3); an indoor air discharge port (126) that discharges the indoor air from the air conditioner formed at an upper surface of the case positioned on the indoor side (illustrated in figure 3), and wherein the at least one indoor heat exchanger is vertically arranged adjacent to and inside the indoor air suction port (illustrated in figure 3); an outdoor air suction port (area where air 54 enters) that sucks the outdoor air into the air conditioner formed in a rear surface of the case positioned on the outdoor side (illustrated in figure 3); and an outdoor air discharge port (area of arrow 56), wherein the outdoor heat exchanger, is installed adjacent to and inside the outdoor air suction port to heat exchange with the outdoor air sucked in through the outdoor air suction port (illustrated in figure 3). Wollaber further teaches a compressor (64) that compresses a refrigerant into a high temperature and a high pressure (see column 50, lines 50-53) and is installed on one side of the at least one outdoor heat exchanger (illustrated in figure 2), It is further noted that the recitation "upper" is absent a reference frame and depending on how the air conditioner is viewed, there can be multiple "upper" surfaces.

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Wollaber fails to teach wherein the at least one outdoor heat exchanger comprising first and second outdoor heat exchangers; wherein the indoor air suction port is substantially the same size as the front surface of the case; wherein the second outdoor heat exchanger is installed adjacent to and inside the outdoor air discharge port to heat exchange with the outdoor air discharged through the outdoor air discharge port; wherein the compressor comprises a horizontal type compressor that includes a driving device horizontally arranged; and wherein the outdoor air discharge port is formed in the upper surface of the case positioned on the outdoor side.

Liang teaches an air conditioner (see figure 1) that includes indoor and outdoor cross flow fans (21 and 22), an evaporator (12) and a first condenser (13a) located near an outdoor suction port (illustrated in figure 1) and a second condenser (13b) located near an outdoor discharge port (208). It is noted that the first and second outdoor heat exchangers are interpreted as being both vertically and horizontally installed since no reference frame has been given to define “vertical or horizontal”.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the air conditioner of Wollaber to include the first and second outdoor heat exchangers as taught by Liang in order to maximize heat transfer between air and the outdoor heat exchangers, thus increasing cooling efficiency.

The general concept of providing the indoor suction port to be the substantially the same size as the rear surface of the case falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Liang which teaches that the indoor suction port is substantially the same size as the front surface of the case [illustrated in figure 1], and one having

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ordinary skill in the art would have been motivated to provide the outdoor suction port to be the substantially the same size as the rear surface of the case in order to provide the air conditioner the capability of suctioning more air, thus increasing cooling efficiency.

The general concept of providing an outdoor air intake that is formed on an upper surface of a window-type air conditioner falls within the realm of common knowledge as obvious rearrangement of parts and is illustrated by Bolton which teaches a window mounted air conditioner (referring to figure 4) including outdoor air discharge louvers (38) defining an outdoor air discharge portion (illustrated in figure 4), wherein the louvers are positioned on an upper surface of the air conditioner (illustrated in figure 4), and one having ordinary skill in the art would have been motivated to include the use of an outdoor air intake that is formed on an upper surface of a window-type air conditioner in order to exhaust more air form the condenser, thus increasing heat transfer efficiency.

Bolton further teaches the concept of providing a horizontal rotary compressor (32) mounted to a base pan (42) of the outdoor section (14) of the air conditioner (illustrated in figure 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the compressor of Wollaber as modified by Liang with the horizontal rotary compressor as taught by Bolton in order to allow for more room for other components of the air conditioner to be installed.

Regarding claims 6 and 20, Wollaber teaches that the indoor and outdoor cross flow fans comprise: a hub (annotated below) arranged extending in a longitudinal direction of the at least one indoor heat exchanger (illustrated below) and connected to a driving motor (72); and a

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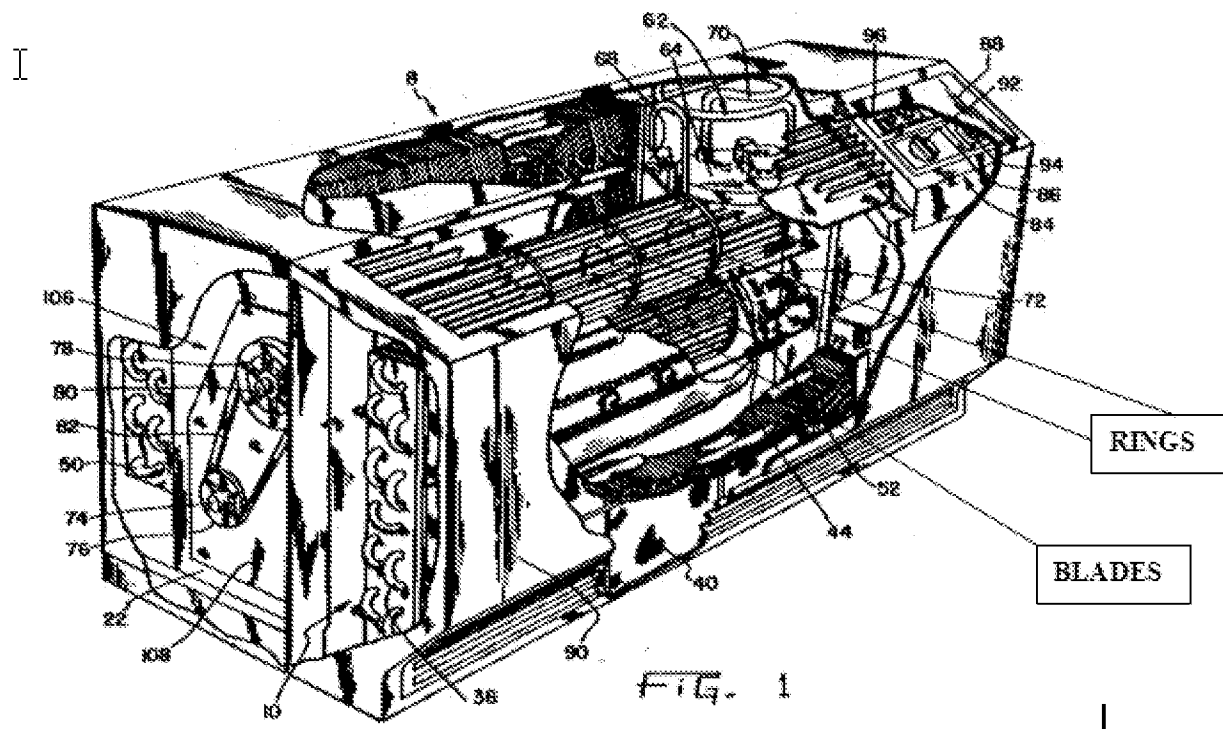
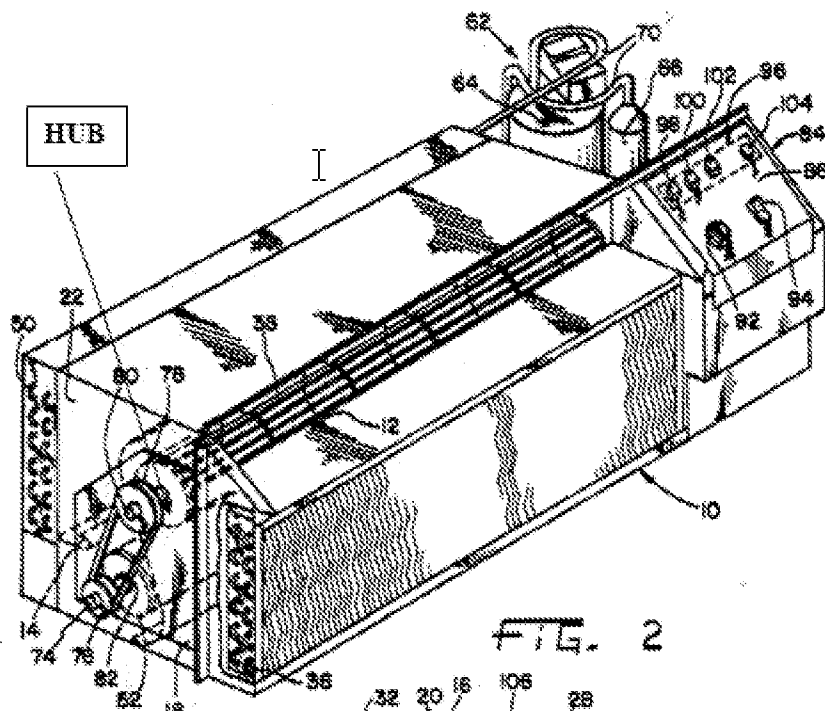
plurality of blades (annotated below) provided on an outer circumferential surface of the hub with a certain interval therebetween (illustrated below) and arranged extending in the longitudinal direction of the at least one indoor heat exchanger (illustrated below).

Regarding claim 7, Wollaber teaches a guide panel (60) that guides the indoor air sucked in through an indoor air suction port to an indoor air discharge port (illustrated in figure 3), installed on one side of the indoor cross flow fan (illustrated in figure 3); and an indoor cross flow fan stabilizer (12) that divides a suction side and a discharge side of the indoor cross flow fan installed at one side of the case (illustrated in figure 3).

Regarding claim 13, Wollaber teaches an outdoor cross flow fan stabilizer (14) that divides a suction side and a discharge side of the outdoor cross flow fan installed between the first outdoor heat exchanger and the second outdoor heat exchanger (illustrated in figure 3); and a guide panel (60) that guides the air sucked in through the outdoor air suction port to the outdoor air discharge port installed on one side of the outdoor cross flow fan (illustrated in figure 3).

Regarding claim 14, Wollaber teaches that the plurality of blades of the outdoor cross flow fan contacts with condensed water stored in a lower portion of the case positioned on the outdoor side, thereby spraying the condensed water when the outdoor cross flow fan is rotated (as illustrated in figure 3, if condensation from condenser 50 overflows stabilizer 14 while fan 52 is sucking air through the condenser, water would contact fan 52).

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Response to Arguments

Applicant's arguments filed 7/24/2009 have been fully considered but they are not persuasive. On pages 6-7 of the applicant's remarks section, the applicant presents the following argument: *"Independent claim 1 recites, inter alia, an outdoor air discharge port that discharges the outdoor air from the air conditioner formed in the upper surface of the case positioned on the outdoor side, wherein the first outdoor heat exchanger is vertically installed adjacent to and inside the outdoor air suction port to heat exchange with the outdoor air sucked in through the outdoor air suction port, and wherein the second outdoor heat exchanger is horizontally installed adjacent to and inside the outdoor air discharge port to heat exchange with the outdoor air discharged through the outdoor air discharge port. Wollaber, Laing, and Bolton, taken alone or in combination, fail to disclose or suggest at least such features of independent claim 1, or the claimed combination."* The Examiner respectfully disagrees. Wollaber teaches all of the aforementioned limitation including a first outdoor heat exchanger being vertically installed adjacent to and inside the outdoor air suction port, since figures 1-3 shows that the condenser is vertically disposed. However Wollaber fails to teach the remainder of the aforementioned limitation. Liang was introduced for the teaching of utilizing a first condenser being disposed adjacent an outdoor air suction port and a second condenser being disposed adjacent to an outdoor air discharge port, and one of ordinary skill in the art would have been motivated to include the second condenser for the benefit of maximizing the heat transfer area of the condenser. Also, it is noted that the first and second outdoor heat exchangers are interpreted as being both vertically and horizontally installed since no reference frame has been

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given to define “vertical or horizontal”. In addition, Bolton was not used for the teaching of the aforementioned limitation. Therefore, the combination art rejection of claim 1 is proper.

4. On page 8 of the Applicant’s remarks section, the applicant provides the following argument: *“None of the applied references disclose or suggest that the second outdoor heat exchanger is horizontally installed adjacent to and inside the outdoor air discharge port to heat exchange with the outdoor air discharged through the outdoor air discharge port, as recited in independent claim 1.”* The Examiner respectfully disagrees. Referring to figure 1 of Laing, the first and second outdoor heat exchangers are interpreted as being both vertically and horizontally installed since no reference frame has been given to define “vertical or horizontal”. Therefore, the limitations of claim 1 have been met. In conclusion, the Examiner respectfully submits, for at least the reasons stated above, that the rejections of the pending claims are properly upheld.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AZIM RAHIM whose telephone number is (571) 270-1998. The examiner can normally be reached on Monday - Thursday 7am - 3pm EST and Friday 7am - 9:30am EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. R./

Examiner, Art Unit 3744

3/19/2010

/Frantz F. Jules/

Supervisory Patent Examiner, Art Unit 3744